

CMS User experiences with latest MC NLO codes (for WbWb)

Powheg-RES b_bbar_4l [arXiv:1607.04538](https://arxiv.org/abs/1607.04538)

Status of Pythia8 matching interface

- C++ translation of alternative UserHook algorithm for setting shower starting scale inside resonance
- Integrated in CMS software:
<https://github.com/cms-sw/cmssw/pull/16546>
- For ISR use either wimpy shower or power shower + emission veto

"Trivial" difficulties with LHE production

- OpenLoops does not install when path length > maximum fortran line length
- Requires gfortran >= 5 (CMSSW release for 2016 data analysis provides 4.8.1)
- Compressed LHE weights format cannot be read by CMS LHEReader

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- *Powheg ttb_NLO_dec* [arXiv:1412.1828](https://arxiv.org/abs/1412.1828)
 - NLO top decays (**all decay modes**, exclusive), LO off-shell/interference effects
 - Standard Powheg-V2 LHE production, same Pythia8 interface as b_bbar_4l → ready to go!
 - *aMCatNLO* and *Sherpa*: No working recipe for WbWb at NLO+PS yet?